

ABSTRACT

There are provided a radio system and a radio communication device capable of removing a phase noise 5 superimposed on a reception signal and a phase noise generated in the system of a reception radio unit. In this system, a radio transmission device (101) transmits a multiplex signal multiplexed so that a pilot signal is placed on the center frequency. A radio reception device 10 (151) frequency-multiplies a reception signal by a pilot signal having the same frequency error and phase noise as the reception signal, and frequency-multiplies the phase noise contained in a local oscillation signal used when subjecting the reception signal to frequency 15 conversion, by using the signal having the same phase noise. Thus, it is possible to remove the frequency error and phase noise contained in the reception signal and the phase noise in the reception system.